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ARE CROUP AND DIPHTHERIA IDENTICAL?

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THE identity or non-identity of croup (pseudo-membranous) and diphtheria has long been a question open to frequent and sometimes animated discussion and controversy, by medical societies and writers, and even now the relation between the two diseases can by no means be considered as definitely settled. Practitioners there are, with the most extensive opportunities of observing both diseases, who do not agree concerning their identity or non-identity, and authors of the highest eminence are still found on either side of the question.

The pathologist is engaged in examination of the pathological products and the anatomical characters of the two affections, with the hope of arriving at a definite solution of the question in dispute, while the practitioner awaits with interest the conclusion of the former, which must necessarily affect his management and therapeutics of the diseases. Whether practitioners or pathologists, we therefore have a common interest in the study of the pathological and clinical features of the two affections.

The most prominent pathological feature, and one common to both of these diseases, is the exudation which takes place upon certain portions of the mucous membrane. This has been subjected to chemical and microscopical examination, with the hope of establishing either the identity or the duality of the two affections; but it must be confessed that no very satisfactory result has yet been attained.

The false membrane of croup is said by some investigators to be not simply fibrine, but to consist of effused lymph, in which the presence of albumen can always be chemically demonstrated; while the false membrane of diphtheria, when chemically treated, is said to assume entirely the character of pure fibrine. When macerated in water it yields no gelatine, differing from coagulable lymph in this respect, as well as in showing no evidence of albumen on being boiled.

But authorities are not agreed upon these distinctive characters. Some even who deny the identity of the two diseases have failed to recognize this distinction, and have no confidence whatever in any known chemical test as a means of distinguishing between the pseudo-membranes of croup and of diphtheria.

Microscopically examined, the false membrane of croup has been found to consist of a mass of cystoid corpuscles, the result of an exudation from the vessels and glands of the mucous membrane, while the mucous membrane itself is found singularly free from pathological injury. This latter point has attracted the attention of numerous pathologists. Albers, of Bremen, records cases in which there was not even any trace of inflammation of the mucous membrane beneath the exudation; he thinks that after the exudation is accomplished, the inflammation probably ceases altogether. Barthez and Rilliet, who do not separate croup from diphtheria, but frequently include both diseases under the former name, remark* "that the mucous membrane beneath the false membrane presents very various conditions,—it is sometimes perfectly healthy; this fact we have ourselves established." And, again, speaking of cases in which only mere shreds of false membrane are found in the larynx and trachea after death, they inquire,† "May there not yet be a disease which presents so great a similitude to croup that it has been confounded with it by most authors, and in which there is found after death either no alteration in the mucous membrane of the larynx, or a simple inflammation, without swelling enough to obliterate the air-passages?" These writers evidently recognized a distinction between croup and diphtheria, although they failed to separate the two affections.

Nearly all authors who advocate the separation of the two diseases believe that the affection of the mucous membrane in croup is, as a rule, less profound than in diphtheria. But then it is obvious that this is simply a difference of degree, rather than a specific one, and that it cannot therefore be regarded as a distinctive feature capable of separating the two diseases. West, of London, and Hassenstein, of

* A System of Medicine, by Reynolds, vol. i. p. 93.
† Ibid.

Germany, both of whom believe that croup and diphtheria are distinct diseases, confess that no specific anatomical distinction can be observed between the milder attacks of the two affections. West remarks,* "I have come indeed to the conclusion, which I long hesitated to adopt, that what differences soever exist between croup and diphtheria, they must be sought elsewhere than in the pathological changes observable in the respiratory organs."

Virchow believes, however, that he has succeeded in establishing a pathologico-anatomical basis for the diphtheritic process. Through his investigations he found that in the diphtheritic inflammation the exudation takes place into the substance of the mucous membrane, and that this membrane then undergoes interstitial necrosis, from cessation in the supply of nourishment, as he believes, through compression of the blood-vessels. He distinguishes this exudative form of inflammation from the croupous, in which the exudation was found to lie upon the surface of the mucous membrane. This seems like a clear and definite anatomical distinction between the two diseases, and perhaps it is one which may sometimes be clearly made out; but in opposition to Virchow's theory, Oertel describes several cases of diphtheria in which the exudation had formed upon the surface of the mucous membrane. This experience of Oertel evidently leads to the conclusion so well expressed by this author, when he says,† "The anatomico-pathological separation of croup and diphtheria, according as a fibrinous exudation lies upon or in the mucous membrane, is no longer possible, since we have seen that in the severest forms of diphtheria, those followed by extensive and long-enduring paralysis, free fibrinous exudation has been formed upon the mucous membrane."

A new interest has been awakened concerning the nature of diphtheria since the simultaneous discovery by Oertel and Heuter of vegetable organisms, or bacteria, in the diphtheritic membranes. To these vegetable organisms Oertel has given the name of micrococci. They are said to appear in the exudation at its earliest formation, being first seen upon its surface, and gradually extending to the deeper layers, and, finally, in the septic form of the disease, they enter the blood, the muscles, and even the bones in some rare instances. The number of micrococci developing in the body is said to bear an intimate relation to the severity and progress of the disease,—increasing with its severity, and gradually diminishing as convalescence advances.

These organisms are now believed by many German investigators to be not simply an accidental occurrence, but inseparable from the diphtheritic process, just as certain bacteria enter into the process of decomposition, and are essential to it. In order to prove that these vegetable organisms are the infectious agents of diphtheria, Oertel, Heuter, Eberth, and others, have made numerous experiments upon animals, by inoculating them with micrococcus growths taken from diphtheritic tissues, and the result has been the establishing of the diphtheritic process. These experiments, together with his microscopical investigations, have led Eberth to believe that without micrococci there can be no diphtheria.

According to Oertel, these micrococcus growths do not appear in the pseudo-membrane of croup. He writes,‡ "I have never seen a growth of micrococcus appear on the croupous membrane which I caused by application of ammonia, although the animals experimented on generally lived much longer than those in which a diphtheritic infection had been produced, and although the fibrinous exudation afforded a soil which varies little, or not at all, in its histological and chemical composition, from that induced by diphtheria. I have not even observed it after the micrococcus commonly present in the mouth had been placed upon the fibrinous exudation while it was in process of formation."

The presence, then, of micrococci in the false membrane of diphtheria, and their absence in the false membrane of croup, appears, at last, like a distinction capable of separating the two diseases; but, like the chemical and the anatomico-pathological distinctions, it cannot stand the light of more recent investigation. Dr. J. Lewis Smith, of New York, who has quite recently been studying the relation of bacteria to diphtheria, writes as follows:§ "I have lately, with my friend Dr. Keitzmann, recently of Vienna, a most excellent

* West on the Diseases of Children, p. 318.
† Cyclopædia of the Practice of Medicine, by Ziemssen, vol. i. p. 662.
‡ Ibid., p. 590.
§ Virginia Medical Monthly, February, 1875.

microscopist, examined the secretions and exudations upon the fauces in various cases of pharyngitis, both diphtheritic and non-diphtheritic; and we have always found the micrococcus in abundance in the inflammatory product, whether diphtheritic or non-diphtheritic, a secretion or exudation, if it had remained for some time upon the surface of the fauces. In one case of simple pharyngitis no micrococcus could be discovered on the first day in the secretion which lay in the depressions over the tonsils, while on the second day numerous micrococci had appeared. The micrococcus in the inflammatory product upon the fauces certainly does not indicate disease of a specific nature."

From all that we know at present, the conclusion, I think, cannot be resisted, that, so far as the local appearances of true croup and of diphtheritic croup are concerned, we have no certain means of distinguishing between the two diseases. Sir William Jenner very truly remarks,* "Certainly, if you were to place in the hands of the best pathologist the larynx of a child who had died from membranous inflammation of the larynx, the so-called idiopathic croup, and that of one who died from a true diphtheritic inflammation of the larynx, he would be unable to distinguish the one from the other. There is no anatomical character by which he could say, 'This is true croup; this is diphtheritic inflammation of the larynx.'"

It is chiefly the difficulty of distinguishing between the inflammatory processes of the two diseases that has recently led Jenner to doubt, in common with many eminent French authors, whether croup and diphtheria are truly distinct and independent diseases.

Before answering the question for ourselves, let us briefly study the two diseases in their historical, etiological, and clinical aspects. First, however, I desire to say that the sameness of anatomical changes produced by two diseases does not necessarily establish their identity. For example, how widely different are the symptoms and fatality of ordinary metritis and puerperal fever! and yet, when death occurs, the anatomical changes in the womb are precisely the same. Again, Empis† informs us that the exudation of diphtheria, and that frequently seen on the tonsils and fauces during an attack of scarlet fever, cannot be microscopically distinguished; and yet I believe there is abundant evidence to prove that these diseases are not identical. And, again, according to Oertel, the application of ammonia to the larynx, as we have already seen, will produce a croup the anatomical appearances of which differ but little or not at all from true diphtheritic croup; and yet no one would for one moment think of calling croup thus produced true diphtheria.

It seems evident from these examples that any sameness which may be observed in the anatomical appearances of croup and of diphtheria should of itself furnish no insurmountable barrier to the belief that they are distinct and separate diseases.

Examining the historical accounts of the two diseases, we find that neither of them can be considered new, but that both, very probably, have existed in various parts of the world as far back as the history of man extends. In the earlier accounts of these affections we find that they were described under a great variety of names, many of which were strictly symptomatic, and indicate that a distinction between the two diseases was observed, although it was not then clearly defined. More than a century ago, however, well-defined distinctions were pointed out. In the year 1755, Dr. Russell, of London, in giving an account of an epidemic of malignant angina then prevalent, was careful to distinguish it from croup. And Dr. Home, of Edinburgh, in an essay which he wrote in 1765, entitled "An Enquiry into the Nature, Cause, and Cure of Croup," was also careful to distinguish croup, which he regarded as an acute inflammatory affection, from the epidemic disease described by Russell. But, notwithstanding the distinction so carefully marked out by these authors, the liability of the exudation in malignant angina to spread to the larynx, and the greater prevalence of the disease among children, led to confusion of the two diseases.

In 1779, Dr. Johnstone, the younger, of England, in a work on "Malignant Angina," etc., called attention to the error then prevalent of confounding croup with the former affection. He quoted from Home to show that the two diseases were not identical, and earnestly endeavored to avert the fatal mistake then being made

* The Lancet, January 16, 1875.
† Aitken's Science and Practice of Medicine, by Clymer, vol. i. p. 515.

by treating the croup of malignant angina, as idiopathic croup, with antiphlogistic remedies. He contended that malignant angina was not, like croup, strictly inflammatory, but that it was a disease of low type, subject to epidemic influence, and required the same sustaining plan of treatment practised by his father. But, unfortunately, the efforts of Johnstone were unavailing. The name of epidemic croup was still commonly applied to the affection, and the antiphlogistic treatment laid down by Home for idiopathic croup continued to be vigorously employed against the other.

The first accurate account we possess of the nature of diphtheria comes from the pen of Bretonneau, in the year 1821, and from this time forward croup and diphtheria have generally been described apart; yet it must be confessed that Bretonneau himself failed to distinguish between the two affections. The work of Bretonneau, however, in the hands of English and Scotch practitioners, who were most familiar with idiopathic croup, rendered it comparatively easy for them to mark out the points of differentiation between the two diseases. After the appearance of the work of Bretonneau, Dr. Abercrombie,* of Scotland, speaking of diphtheria as it prevailed in Edinburgh in 1826, says that "it is evidently an affection quite distinct from the idiopathic inflammation of the membrane of the larynx, to which we commonly apply the name of croup."

Although diphtheria had long and frequently prevailed in France, England, and elsewhere, we have no record of the disease occurring in the United States from 1771, when it was described by Bard,† until 1856, when it appeared in California, and assumed the character of an epidemic; from thence it spread to the Northern States. It reached Philadelphia in 1860, and prevailed with considerable virulence during a period of five or six years; and it has ever since existed in the city, but in an abated form.

On examining the records of the Health Office of Philadelphia, I find that no deaths were recorded from diphtheria prior to 1860, but that croup claims its victims as far back as the records extend. During the years 1858–9, the deaths from croup amount to 604, and during 1860–1, they amount to 658; this is only a slight increase, and may, perhaps, be accounted for by the increase of population. During the latter period 809 deaths also occurred from diphtheria. Supposing the two diseases to be identical, we then have 1467 deaths occurring during the latter period, and only 604 during the former period. Surely, this is very different from the course pursued by croup prior to 1860. Mere increase of population will not account for this difference, for we find that during the fifteen years previous to 1860 the average number of deaths annually from croup amounts to .49 to every 1000 of the population; and during the fifteen years subsequent to 1860 the average number annually amounts to .45 to every 1000 of the population, and, in addition to this latter number, the average number of deaths annually from diphtheria amounts to .36 to every 1000 of the population. These statistical facts may be seen more in detail in the following table.

Year.	Annual Population.	Deaths from Croup.	Deaths from Croup in every 1000 of the Population.	Year.	Annual Population.	Deaths from Croup.	Deaths from Diphtheria.	Deaths from Croup in every 1000 of the Population.	Deaths from Diphtheria in every 1000 of the population.
1845	333,397	176	.52	1860	565,529	354	307	.62	.54
1846	348,469	111	.31	1861	576,378	304	502	.52	.87
1847	363,541	121	.33	1862	587,227	258	325	.44	.55
1848	378,613	177	.46	1863	598,076	443	434	.74	.72
1849	393,685	130	.33	1864	608,925	455	357	.74	.58
1850	408,762	151	.36	1865	619,774	350	260	.56	.42
1851	424,438	180	.42	1866	630,623	239	192	.37	.34
1852	440,114	208	.47	1867	641,472	185	119	.28	.18
1853	455,790	303	.66	1868	652,321	206	119	.31	.18
1854	471,466	304	.64	1869	663,170	237	182	.35	.27
1855	487,142	266	.54	1870	674,022	318	172	.47	.25
1856	502,818	268	.53	1871	684,871	264	145	.38	.21
1857	518,494	256	.49	1872	695,720	297	150	.42	.21
1858	534,170	292	.54	1873	706,569	200	110	.28	.15
1859	549,846	312	.56	1874	717,418	199	179	.27	.25

* A System of Medicine, by Reynolds, vol. i. p. 11c. † Trans. of Am. Philos. Soc., vol. i., Second Edition, p. 388.

The cause and nature of the two diseases are believed by the majority of authors to be essentially different. Croup is regarded as an acute inflammation of the larynx, or of the larynx and trachea, with a peculiar tendency to the formation of a plastic exudation. There exists, doubtless, some unknown predisposing cause which determines the production of false membrane upon the inflamed mucous membrane of these parts, and when that condition is present, cold, or cold combined with dampness, is the most frequent cause of the disease.

The contagious nature of diphtheria is now generally admitted; but that it may also develop spontaneously, under the influence of a peculiar miasm, seems highly probable. It has therefore been called a *miasmatic contagious disease.* Diphtheria sometimes occurs sporadically; but when it has once gained a foothold it is liable to become widely diffused by contagion, assuming frequently the character of a virulent epidemic. Croup differs in this respect from diphtheria, since it is not contagious, nor does it ever occur epidemically.

A very important question concerning the etiology of diphtheria, and one that remains to be determined, is, What relation do the bacteria described by Oertel and his associates bear to the disease? If they stand in a causal relation they should undoubtedly be capable of reproducing the disease, and they should invariably be present in every case; their absence, then, in an exudation would distinguish it as non-diphtheritic. Although Oertel and others have succeeded in giving rise to the diphtheritic process by inoculation with micrococci taken from diphtheritic tissue, yet this does not prove that the micrococci, *per se*, were the cause of the disease; for having been taken from diphtheritic tissue it is not surprising that they should contain the specific poison of the disease. I am inclined to believe that false membrane simply affords a favorable nidus for the propagation and development of these vegetable organisms, and that when these organisms come in contact with diphtheritic tissue they simply borrow the infectious principle of the disease from some still more subtle agent not yet discovered.

Age exerts an influence over the predisposition to both croup and diphtheria; but there is this difference: croup is especially a disease of childhood, rarely occurring after the tenth year. Diphtheria shows a preference to attack children, yet adults are to no great extent exempt from it. That croup is an affection peculiar to early life is abundantly attested by statistical records. The Fifth Report of the Registrar-General of England shows that of 1022 deaths from croup, 1013, or 99.9 per cent., occurred before the age of fifteen, and 879, or 87.9 per cent., before the age of five years.* The Reports of the Registrar-General of England also show that of 24,219 deaths from diphtheria, 85 per cent. occurred before the age of fifteen, and 50 per cent. before the age of five years.† These figures prove conclusively that diphtheria occurs more frequently among adults than does croup.

By reference to the records of the Health Office of this city, I find that during the last fifteen years (1860–74) 4309 deaths have occurred from croup, and 3553 from diphtheria. The difference between the death-rates of these two diseases at various ages is very striking, as the following table will show:

	Deaths from 1860 to 1874, both inclusive.	Under 5 Years.	Percentage of Deaths under 5 Years.	5 to 10 Years.	Percentage of Deaths from 5 to 10 Years.	10 to 15 Years.	Percentage of Deaths from 10 to 15 Years.	15 Years and upwards.	Percentage of Deaths from 15 Years and upwards.
Croup	4309	3720	86.3	528	12.2	28	.6	33	.7
Diphtheria	3553	2463	69.3	754	21.2	128	3.6	208	5.8

Sex seems also to exert an influence over the predisposition to croup. That more males than females die from croup is a fact which has been confirmed by nearly all observers; yet, like the influence of age over the predisposition to the disease, it has

* West on the Diseases of Children, p. 295.
† A System of Medicine, by Reynolds, vol. i. p. 113.

never received any adequate explanation. The excess on the side of the males, however, is not very striking. Squire, of London, remarks,* "A comparison between the deaths from all causes of each sex for each year, with the deaths from croup at each year, sex with sex, shows a difference of excess on the side of the males so constant that it is rare to meet with an exception, but at the same time so slight that it can only be considered a characteristic of the disease in the aggregate," etc. According to the same author, the proportion of deaths from croup among the sexes is 28.7 females to 30.8 males. The table which is inserted below shows that in Philadelphia the deaths from croup have been in the proportion of 27.2 females to 30.2 males.

Diphtheria being a contagious disease, it is doubtful whether it attacks either sex in preference; yet some observers tell us that more females than males suffer from the disease. If this is true, it is perhaps due to the fact that the domestic duties of females entail upon them greater exposure to the contagion. The statistics which I have collected from the mortuary tables of this city show that, from croup, the proportion of deaths to the population, sex with sex, is somewhat greater on the side of the males; while concerning diphtheria, the proportion of deaths is almost the same in both sexes. These facts are exemplified in the following table:

Sex.	Average Annual Population of the City from 1860 to 1874.	Average Number of Deaths from Croup annually from 1860 to 1874.	Average Number of Deaths from Diphtheria annually from 1860 to 1874.	Average Number of Deaths from Croup annually in every 1000 of the Population.	Average Number of Deaths from Diphtheria annually in every 1000 of the Population.
Males.....	305,063	151	113	.49	.37
Females.....	336,406	136	124	.40	.368

The influence of climate in developing croup is admitted by all writers. Croup in Northern Germany is more apt to prove fatal than croup in some parts of France. The exceedingly variable climate of Scotland and England renders croup more frequent and fatal there than it is in some other countries. Cold, moisture, rapid alternations of temperature, and long-prevailing easterly winds, are usually the meteorological characteristics of that country or of that season in which croup is most frequent and fatal.

Concerning the climate and the geographical relation of that part of Scotland in which croup is most rife, Squire remarks,† "The classical croup districts of Scotland still retain their pre-eminence; they are not confined to the west coast of Scotland; the eastern coast is deeply indented by the sea, and not only do deep valleys of clay extend from these firths, but their shelving shores leave a great expanse of ooze uncovered at every tide; and during the easterly winds, which here prevail for three months of the year with great bitterness, the characteristic cases of Scotch croup occur. This part of Scotland forms an isthmus, only thirty miles in width, in the vicinity of which, and of the peninsula formed by the eastern firths, croup is most fatal, the mortality often exceeding two per cent. As high a rate is found for Ireland, where imperfect drainage, unreclaimed bog, and a large expanse of inland water add to the influence of the Atlantic in causing a remarkable humidity of climate."

Climate exerts no influence over the frequency or the fatality of diphtheria. The disease is no more prevalent or fatal in the humid and variable climate of England and Scotland than it is in the dryer and less variable climate of Spain, or in the salubrious climate of France. It has prevailed in our own country and in England during winters when extreme degrees of cold have been reached; and it has also prevailed in its most virulent form in Egypt, whose climate is hot and dry,—a meteorological condition especially unfavorable to the production of croup.

Finally, an impoverished condition of the blood, whether brought about by insufficient or unwholesome food, by a noxious atmosphere, or by disease, predisposes to the contagion of diphtheria; while, on the other hand, a lusty physical development, and a florid complexion, predispose to croup.

Symptoms.—The symptoms of a well-marked case of croup and those of a well-marked case of diphtheria are widely different. It is only when the latter dis-

* A System of Medicine, by Reynolds, vol. i. p. 73.

† Ibid., p. 74.

ease attacks the larynx that the two affections could possibly be confounded; and even then, if the local disease simply extends from the fauces to the larynx, no difficulty should be experienced in distinguishing it as diphtheritic. But if the local disease begins in, and is confined to, the larynx, it is then frequently impossible to determine whether the case should be classed with diphtheria or with idiopathic croup.

The first symptoms that are ordinarily observed in croup are such as result from a simple catarrhal affection. Occasionally a slight sore throat, or an uneasy sensation about the larynx, may be complained of; but this is scarcely sufficient to attract attention, much less to cause alarm. Within twenty-four or forty-eight hours from the first onset of the disease, symptoms usually appear which betray the nature of the coming danger; and these symptoms very frequently occur for the first time in the night. A child who is put to bed in the evening suffering from nothing more serious, as is supposed, than an ordinary cold, is suddenly awakened in the night with a peculiar ringing cough, and with stridulous breathing: these are the beginning of a long train of painful symptoms, which when once seen are never forgotten. Without stopping to enumerate all these symptoms, let it suffice to say that there are none but what owe their origin to the local disease of the air-passage.

The fauces do not present any invariable change in cases of croup. A blush of inflammation may sometimes be detected on these parts, but rarely, if ever, does inflammation become sufficiently pronounced to occasion any difficulty in deglutition. According to Cheyne, false membrane is never observed on the fauces. He writes,* "If the fauces are discovered to be spotted, as it were aphthous, encrusted with a membrane, or apparently sloughy, the disease is not croup." West, however, says that there may sometimes be a scanty deposit of false membrane on these parts, and that the tonsils, in some rare cases, are found in a state of ulceration. But, speaking of such cases, he remarks,† "It is open to question how far one is justified in classing such cases with true croup; whether they do not approach more nearly to diphtheria, or whether, at least, they do not form a sort of connecting link between the two diseases." According to the experience of most writers, it may be set down as a rule that the exudation of croup does not appear upon the fauces, but is confined to the air-passage; and that the danger which attends the disease is invariably in exact proportion to the amount of exudation that takes place. Neither of these statements, as we shall presently see, will apply to diphtheria.

When cases of croup prove fatal, the average duration of the disease is about four days. It is seldom that more than forty-eight, or, at the most, seventy-two hours elapse from the full development of the croupal symptoms until the fatal end is reached; and allowing from twenty-four to forty-eight hours for the premonitory or catarrhal stage, it will be seen that the disease runs its course in from three to five days. Although diphtheria not unfrequently destroys life as rapidly as does croup, yet its maximum duration is much longer.

Diphtheria makes its appearance under two very different groups of symptoms: one group arises from the constitutional disturbance, and the other from the local disease. The general symptoms, as they first appear, are not unfrequently so trifling in degree that they do not attract attention until after the local disease has made some progress; and from this time forward both the general and the local symptoms may coexist in every degree of severity, sometimes the former and sometimes the latter attaining the prominence. The constitutional disorder manifests the character of an infectious disease: there is marked depression of the vital powers; the pulse becomes exceedingly frequent and feeble, and sometimes irregular, in its beat; the temperature, which is considerably increased at the commencement of the disease, frequently undergoes a decided reduction; frequent attacks of syncope may take place; and, finally, death may result by asthenia.

The advancing asthenia is usually accompanied by an increase of the local ailment, yet there is no constant relation between the two symptoms. It often happens, especially during epidemic visitations of diphtheria, that the local symptoms are so trivial as to be cast into the shade by the grave constitutional disorder which attends them; and death not unfrequently occurs even when the local ailment is so insignificant that it passes entirely unnoticed.

* Cyclopædia of Practical Medicine, vol. i. p. 536.
† West on the Diseases of Children, p. 296.

Death by asthenia also frequently takes place long after all symptoms of the local disease have disappeared.

Ordinarily, however, the local symptoms are the first to call attention to the disease. Among the earlier of these symptoms are pain, heat, and soreness of the throat, with some difficulty in swallowing. An inspection of the fauces will now reveal the tonsils and soft palate inflamed and swollen. The inflammation is not always equally diffused over the fauces; some places are apt to be more turgid, or livid, than others, giving to the parts a peculiar mottled appearance. Among the earlier symptoms of diphtheria, there are perhaps none which are more suggestive of the disease than this peculiar mottled appearance of the fauces, and especially when taken in connection with the fact that the depression of the vital powers of the patient is out of proportion to the severity of the local ailment.

The next important symptom—the one that usually characterizes the disease—is the exudation which takes place upon the inflamed mucous membrane. It appears first, most frequently, within the follicles of the tonsils or upon their inflamed surface, and rapidly extends to all the parts where redness and swelling were first apparent. Not unfrequently the pharynx, the tonsils, the arches of the palate, the velum, and the uvula, are all uniformly covered with the exudation. It may also extend to the nasal passages, to the larynx, and even to the œsophagus. It is liable to appear upon all abraded or denuded surfaces, whether of the mucous membrane or of the skin.

Speedily the superficial layers of the deposit on the fauces and in the nasal passage partially separate, and undergo decomposition; this gives great fetor to the patient's breath, and also gives rise to an offensive and acrid discharge from the nostrils. Frequent attacks of epistaxis may take place, and the diseased mucous membrane of the mouth and fauces is not unfrequently caused to bleed by the slightest touch. Coupled with the local disease of the fauces there is usually tenderness and swelling of the submaxillary and cervical glands, and to some extent also of the parotids.

The local disease of diphtheria shows a remarkable tendency to extend to the larynx. It has been estimated that one-half of the fatal cases die from this accident. Of twenty-six deaths collected by the *British Medical Journal*, fourteen were from asthenia, eight from implication of the larynx, three from syncope, and one from subsequent bronchitis.* And Dr. Ballard† found that in fifty-eight deaths twenty-seven were from laryngeal complication and twenty-three from asthenia. The following table, which I have copied from Reynolds's "System of Medicine,"‡ shows the fatal cases, last referred to, distributed according to age and period of illness:

	Under 5 Years.	Under 10 Years.	10 Years and upwards.	First Week.	Second Week.	Third Week.	Fourth Week.
Laryngeal affection.....	17	7	3	18	8	1	
Exhaustion.....	13	5	5	8	8	3	4

When the exudation extends to the larynx it gives rise to the same group of symptoms that are observed in true croup. The distinction, however, chiefly consists in the fact that in diphtheria the exudation begins in the fauces and extends to the larynx, while in croup the larynx is primarily attacked. There are also some antecedent and concomitant symptoms, already described, which will sometimes aid us in differentiating between the two diseases. Almost all the cases that meet with this accident terminate fatally; and death results by suffocation, as in true croup. The average duration of the fatal cases is much longer than in croup; this fact is exemplified in the above table.

The most rapidly fatal cases are those in which the larynx is primarily attacked; such cases frequently die before the exudation appears on any other part. The local symptoms of these cases usually overshadow the constitutional disorder so completely that it is quite impossible to distinguish between this form of diphtheria and idiopathic croup. It is only when the disease spreads by contagion that its true nature can be fully recognized. Not many months since, I met with a case of this kind in the Northern Home for Friendless Children, of this city, and I regarded it at the time as idiopathic croup; but, finding that

* Vol. i. p. 139. † Loc. cit. ‡ Loc. cit.

the disease was rapidly spreading to other children, and that an epidemic of diphtheria was about to be set up in the institution, I was able to correct my diagnosis. The croupal symptoms in this case were first observed only thirteen hours before death occurred. The autopsy revealed an exudation just beginning to form in the upper part of the larynx; the fauces were not implicated.

Returning to the general symptoms of diphtheria, there are none, perhaps, which more certainly indicate the constitutional character of the disease than the presence of albumen in the urine. Although albuminuria is not a constant symptom, yet, in reference to its frequency, the majority of authors admit that it is observed in the larger proportion of cases. Lee states that it is observed in fifty per cent.; Bouchut and Empis found it in sixty-six per cent.; Eberth, in two out of every three cases; Mangin, in the majority of cases; Squire says that it is found in the great majority of cases; and Sanderson observed it in all the cases which he examined.

Albuminuria is a most important symptom, both in connection with the pathology and the prognosis of diphtheria. The early period of the disease at which this symptom usually appears points to a rapidly developing general infection, and strongly indicates that the blood is the seat of the primary morbid process. Through the medium of the blood the poison of diphtheria reaches the kidneys, and generally gives rise to well-marked and, sometimes, extreme anatomical changes in these organs. Concerning the pathological change observed in the kidneys, Oertel remarks,* "The kidneys are attacked by the diphtheritic process at the beginning, and quite often with the same intensity as is the mucous membrane. The albuminuria, which often appears after a few hours, furnishes at the bedside an accurate diagnosis of the affection of the kidneys. This symptom is an especially important aid in recognizing diphtheria and in estimating its severity. The primarily affected mucous membrane and the forthwith infected kidneys appear to stand in a sympathetic connection, which is formed by the currents of the juices and of the blood, through the absorption and secretion of the infectious materials. Everywhere are found in such cases the signs of parenchymatous inflammation of the kidneys, with hemorrhages and growths of micrococcus.

". . . The greatest alterations are found in the uriniferous tubes and the Malpighian tufts. In the lightest forms of the affection the epithelial cells appear swollen and enlarged, their contents granular and opaque, and, on section, they are seen to fill the canals almost completely. In other cases the cells lie rolled together and loosened from the wall, like solid cylinders in the middle of the canal, and correspond completely with the epithelial casts which are found in the course of the albuminuria of these patients. . . . Of the formation of hyaline casts and their occurrence—although they can be found so often in the urine in severe cases—we have as yet no detailed descriptions, since we seldom have the opportunity in an autopsy to meet with this stage of alteration of the kidneys. . . . The source of the bleeding is generally to be sought in the Malpighian tufts, from which the blood has poured out into the tubes. . . .

"Finally, as to the connection of the disease with the local and general infection, we see in cases of small diphtheritic patches, as in those of widely-extended, tough, false membranes in the air-passages, both active and slight participation of the kidneys in the pathological process without any characteristic difference. But, on the other hand, when general poisoning and the septic form are prominent, the kidneys do not share in the alterations only to a degree which corresponds with that of the other organs and tissues, but they are found in the majority of cases to be the most intensely affected of all."

According to the same writer, the severity of an attack of diphtheria may generally be measured by the presence and amount of albumen in the urine; yet it cannot be denied that the disease often extends to the larynx and terminates fatally without the patient showing any such evidence of general systemic poisoning. Oertel writes,† "According to the observations which I have been able to make during the last ten years, the amount of albumen excreted with the urine of those adults in whose cases an opportunity was

* Cyclopædia of the Practice of Medicine, by Ziemssen, vol. i. p. 648.

† Ibid., p. 604.

afforded of making a quantitative analysis, was nearly proportional to the intensity of the disease; and in those severe cases which threatened the patient's life, or, indeed, resulted fatally, the amount of albumen in the urine passed during twenty-four hours was from one to three drachms, and six or eight weeks after the healing of the throat-affection albumen could still be demonstrated in the urine. Even a small quantity of albumen in the urine will sometimes enable us to determine the degree of the general infection, especially in cases where the local disease reaches only a medium intensity. I have known of mild cases of that kind, accompanied by very little fever, where the patient was debilitated for months by a condition of oligæmia and inanition, associated with continued albuminuria."

Although it is not established that albuminuria is an essential feature of diphtheria, yet it is a symptom which possesses considerable diagnostic value, since its presence generally enables us to distinguish, in doubtful cases, the diphtheritic disease of the larynx from the croupous.

I am aware, however, that Jenner says he has found albumen in the urine of cases presenting all the characters of true croup. "It has been supposed,"* he says, "that the presence of albumen in the urine would be sufficient to separate the two diseases; and I formerly laid much weight on this distinction. But later years have satisfied me that in cases which present all the characters of true croup, which are sporadic, spread to no other person in the house, come on apparently from exposure to cold and damp,—that in such cases albumen may be present in the urine." Without denying that albuminuria may sometimes be observed in cases of true croup, I would remark, in reference to the statement of Jenner, first, that diphtheria not unfrequently presents, indeed, all the characters of true croup: it may occur sporadically, it does not always spread to other persons in the same house, and it may come on apparently from exposure to cold and damp; so that the presence of albuminuria in such cases should always create at least a suspicion that the disease with which we have to deal is diphtheria and not croup. And, secondly, albuminuria in cases of idiopathic croup must be of exceedingly rare occurrence, since no mention is made of its presence in the standard text-books.

With respect to the post-mortem appearance of the kidneys of patients who have died from croup, there are no abnormal changes observed other than congestion or hyperæmia, which, doubtless, is the result of suffocation. But passive congestion of the kidneys may, by causing stasis in the intertubular capillaries and Malpighian tufts, give rise to transitory albuminuria; a typical example of this is the albuminuria of pregnancy. So that Jenner is perhaps right after all when he says that albuminuria may be observed in cases of so-called true croup. What, then, is the difference between the two diseases in respect to this symptom? It is simply this: In diphtheria, albuminuria makes its appearance at an early stage of the disease, and is the result of some original change in the blood; while in croup it does not make its appearance until a late period of the disease, and is the result of passive congestion of the kidneys brought about by suffocation. In the former disease, albuminuria is a very frequent symptom; in the latter it is of rare occurrence.

Finally, the paralyses which frequently make their appearance during convalescence from diphtheria must be regarded as additional evidence of the general character of the disease. They are some of the characteristic effects of the specific diphtheritic poison; and the intensity of these effects, like all the general symptoms of diphtheria, bears no definite proportion to the extent and persistence of the local lesions. In the whole list of subjective symptoms there is perhaps no single one which more clearly separates diphtheria from all similar exudative forms of inflammation (croup included), than the subsequent appearance of the peculiar diphtheritic paralysis.

Having now briefly sketched the more prominent features of both croup and diphtheria, and having pointed out the analogy and the dissimilarity between the two diseases, I have only to say, in addition, that the facts disproving their identity appear to me of much greater weight than those which are adduced on the opposite side of the question; therefore I am bound to conclude that croup and diphtheria are not identical.

1230 Spring Garden Street.

* The Lancet, Jan. 16, 1875.

THE SHORT FORCEPS AT THE BRIM.

BY H. G. LANDIS, A.M., M.D.

FOR the benefit of those who assert that the short forceps cannot be applied when the head is above the brim, I desire to record in detail the following case.

Mrs. C., æt. 30 years, seventh pregnancy, fell in labor November 13. All her former labors had been long, and two instrumental. Pains began at 1 A.M.; at 2 A.M. the membranes ruptured, and at 3 the first examination was made. The os uteri appeared to be about three inches in diameter; the uterine lips long and thick; the pelvis somewhat funnel-shaped, but not materially diminished in any of its diameters. The presentation was so high up that it was with great difficulty that I could so much as determine what part of the child presented. By using the index and middle fingers the vertex was, however, reached. The woman's perineum was narrow and the vaginal orifice capacious, thus allowing the fingers to reach unusually far. The pains were good and well aided by voluntary efforts, and at 7 A.M. the os was fully dilatable, though at no time until the actual passage of the head was it completely dilated; there being no bag of waters, and the head remaining above the brim. At this time the vertex seemed to be a little lower, but it was only after several efforts, and at the expense of some pain to the woman, that I succeeded in making a diagnosis of a first position; nor was this certainly established until the hand was afterwards passed up during the application of the forceps. Besides this, it may be added that my middle finger is three and a half inches long, and that by using the index and middle fingers together, in a relaxed vagina the reach is at least four and a half inches by actual measurement. We may then rest assured that the head was above the brim. At 11.30 A.M. there was no change whatever; the woman was placed on her back, and the short Davis's forceps were applied. This instrument has a flat button-lock, which requires accurate adaptation of the blades before locking. The application was by no means difficult, but care was necessary to prevent pinching, as the lock was fairly inside the posterior commissure. Traction was then made, with the handles in the right hand and the left resting behind the lock, with a finger on each blade in front of the lock. The traction was made at first more by pressure downwards with the left hand than directly with the right. Between the pains both pressure and traction were discontinued, and the head delivered in twelve minutes from the time of applying the forceps. The child was a female, weight nine pounds. The head was large and not wire-drawn, so that the measurements of its diameters made forty-eight hours after birth are not far out of the way. They were, occipito-frontal five inches, occipito-parietal four and a half inches. The woman's recovery was prompt and uncomplicated.

Remarks.—The use of the short forceps at the brim of the pelvis is shown, by the case just reported, to be perfectly feasible. It does not, however, follow that this procedure is always adequate or even preferable. It is certainly safer in the hands of an inexperienced accoucheur than the employment of the long forceps, especially of that very powerful instrument, the "Wallace" forceps. By reason of the more decided curves and extreme leverage of the latter, a mere tyro, uncertain of his diagnosis and ill informed of the nature and direction of the pelvic canal, can sometimes hook on to the head and by main force deliver it. Were he restricted to the short forceps, he must either use them intelligently or call for assistance.

NILES, OHIO, December, 1875.

CASE OF OPIUM-POISONING—HYPODERMIC INJECTION OF ATROPIA—RECOVERY.

BY R. G. WHARTON, M.D.,

Port Gibson, Miss.

I WAS sent for in haste, April 20, 1875, at 8 P.M., to see a gentleman 60 years of age, who was said to be dying. On my arrival in a few minutes, I found him in a profound stupor, from which he could not be aroused, the respirations from four to six in a minute, skin hot and sweating profusely, pulse 66, very strong and full. On examination the pupils were found to be contracted to a fine point; the eyes were rolled up and immovable. I suspected opium-poisoning, and, on inquiry, learned that he had been suffering for some time with neuralgia, and had taken morphia to relieve himself. He had procured some in the morning, and remarked to a friend that he would take three grains at a dose. He appeared to be in imminent danger of death. From what I could learn, he had been in this condition of insensibility, getting worse, for more than one hour, perhaps much longer, as he was alone when first seen by his friends an hour before. I immediately injected hypodermically one-thirtieth grain atropia, which I had with me, applied cold water freely to the face, which was quite livid, and awaited anxiously the result. Seeing no improvement in his breathing ten or twelve minutes afterwards, I again injected one-thirtieth grain of

atropia, continuing the cold applications to the face and neck. In about eight or ten minutes after this second dose the effects were surprising. All of a sudden, after some evident and decided improvement in his breathing, which went up from four to six per minute to eight or nine, he opened his eyes, looked around in a bewildered manner, and sat up in bed; talked in a delirious way; said he felt well.

I remained with him half an hour, and left directions to be sent for if necessary. In a short time I was summoned again. He had relapsed into a stupor; the pulse was sixty, not so strong or full as before, but of sufficient strength; respirations ten to twelve per minute. With cold applications alone I aroused him without much difficulty. He now appeared to be very much excited, talked incessantly, and continued in this excited state all night till 5.30 A.M., when he fell asleep and slept till half-past nine A.M. On awaking he seemed quite relieved, only very much excited during the whole day. After the operation of a purgative, however, he was entirely relieved, but felt weak for a day or two.

CASE OF DISCOLORATION PRODUCED BY THE OXIDE OF SILVER.

BY HORATIO C. WOOD, M.D.

IN my work on Therapeutics, the opinion is expressed that the reason no case of discoloration has hitherto been observed from the use of the oxide of silver, is not that it is not capable of producing such pigmentation, but that it has been so seldom exhibited in sufficient quantity. My remark has elicited the description, in a letter to myself, of a case which occurred in the practice of Dr. B. A. Clements, U.S.A. The patient commenced, October 23, 1874, taking oxide of silver in half-grain doses, t. d., for chronic diarrhœa, and continued (with an intermission of two weeks in November) until December 18, 1874, thus taking in all sixty-three grains in forty-two days.

At the last-mentioned date it was noted that there was a dark, nearly black line near the teeth on the gums of both jaws, especially the lower, and that a bluish discoloration extended to the entire mucous membrane of the gums and lower lip. The general condition was much improved.

PROF. WORMLEY affirms (*American Journal of Pharmacy*, January 1, 1876) that Veratrum album and Veratrum viride both contain veratria, and that the veratralbia of Mitchell is veratria.

TRANSLATIONS.

EXTIRPATION OF NÆVI FOLLOWED BY THE GROWTH OF MALIGNANT TUMORS (*Centralblatt für die Med. Wissenschaften*, No. 44, 1875).—F. Durante (*Arch. di Chirurgia pratica, etc.*, 1874) gives an account of the following three cases of extirpation of nævi materni, followed by the growth of tumors of a malignant character, which were observed by himself.

1. A red nævus of the size of a pea was extirpated from the back of the hand of a girl aged eight months, and upon examination with the microscope was found to consist of cavernous epithelial tissue. The wound healed, but one month after the operation a pigmented, spindle-cell sarcoma of extraordinarily rapid growth appeared in the cicatrix, which was also removed. Two months later the child died, and metastatic tumors were found in the lungs.

2. A dermoid cyst of the size of a pigeon's egg was removed from the left thigh of a man aged forty-seven years. On the periphery of this tumor there was a nævus of the size of a pea, which was removed by the same incision, but, as the microscope proved, not completely. An induration was soon noticed in the cicatrix, and a second more thorough extirpation was performed twenty-five days after the first. A microscopic examination then showed that a giant-cell sarcoma had begun to develop itself in the scar.

3. A small angioma of the under eyelid was removed from a child aged two months, and eight months later a giant-cell sarcoma of the size of a hen's egg, which had appeared at the same point, was successfully removed. W. A.

FOREIGN BODY IN THE BRAIN (*Centralblatt für die Med. Wissenschaften*, No. 43, 1875; from *Archiv der Heilk.*, 1875).—In the brain of a man aged 42, who for a year before his death had suffered from some mental disturbance consequent upon an injury to the head, there was found, after death, a piece of lead-pencil some three inches in length. This lay in the white brain-tissue just beneath the posterior and inferior bones, and did not seem to have caused any marked anatomical changes. No evidence of any perforation of the skull could be found, and the membranes of the brain and the scalp were intact.

Certain appearances on the occipital bone render it probable that the pencil was introduced in this region in early youth. Although its presence gave rise to no symptoms, it is probable that the foreign body caused certain changes in the brain which predisposed the patient to the fatal illness which followed so rapidly upon the injury of the head which he received. W. A.

THE NATURE OF TETANUS (*Gaz. des Hôp.*, No. 58, 1875).—Bouchut found the following changes at the post-mortem examination of a girl aged two years, who died after a diarrhœa of two weeks' duration, during which illness contraction of the hands and feet had from time to time been noticed. There was a brownish discoloration of the pia mater under the pons, extending downwards beneath the anterior fibres of the cord, while the membrane on the posterior surface of the cord was of a normal color. At the middle of the cord the pia mater was adherent to it, but no change could be found in the nerve-substance itself. The connective tissue in the superior part of the spinal canal had a rusty-brown color. Similar changes have been noticed in cases of this character by B., and he thinks that in this case the tetanus was not due to a simple neurosis, but was connected with the alterations described.

W. A.

PHYSIOLOGICAL AND THERAPEUTIC ACTION OF GELSEMIUM SEMPERVIRENS.—Berger (*Centralblatt für die Med. Wissenschaften*, No. 43, 1875) concludes as follows as to the physiological effects of this drug upon cold- and warm-blooded animals respectively. When given to animals of the former kind, gelsemium causes cessation of motion and paralysis of the motor centres of the brain, paralysis of the function of respiration, and increase, followed by depression, of the reflex action of the spinal cord. The excitability of the peripheral motor nerve, and also that of the muscles, is diminished, together with the frequency of the heart's action. The administration of the same drug to warm-blooded animals causes paralysis of the motor centres of the brain, which is preceded by a stage of excitement and paralysis of the respiratory centre in the medulla oblongata. Sensibility remains unimpaired, while reflex irritability is at first increased and finally diminished. Its influence upon the heart's action is not very marked, the slight diminution in the frequency of the pulse appearing to be due to the irritation of the centre for the vagus in the medulla by the imperfectly aerated blood. Large doses cause a moderate diminution of the blood-pressure; and when death occurs it is always due to paralysis of the respiratory function. In order to form an opinion as to its therapeutic worth, gelsemium was given to many patients suffering with neuralgic affections of peripheral and central origin. In all these cases the results obtained were in the highest degree unsatisfactory, and it must not be forgotten that the instances of fatal poisoning on record stand in marked contrast to the slight narcotic effects of the drug. W. A.

ANEURISM OF THE AORTA TREATED BY GALVANO-PUNCTURE BY THE METHOD OF CINISELLI (Dr. Franz Fischer: *Berliner Klinischer Wochenschrift*, No. 45, 1875).—There are two indications for the use of this mode of treatment in aortic aneurism,—either to attain a cure, or to mitigate the sufferings of the patient from neuralgia, dyspnœa, etc., consequent upon the tumor. De Cristoforis dwells especially upon the good effects of electro-puncture in removing the neuralgic symptoms, and advises its use in cases where this is the only good result that can be hoped for. This case, which was treated in the clinic of Prof. Friedreich, in Heidelberg, gives a negative result in this respect, but shows that under certain circumstances the remaining evidences of compression due to aneurism of the aorta may be thus made light, or done away with. The patient was a sailor, aged thirty-one years, who had always been healthy until six months previously, when he had suffered from headache of an intermittent character, and had been in a hospital at Genoa, where the physician who had charge of him noticed a tumor on the right side of the upper part of the chest. He soon suffered from shortness of breath, and had several attacks in which he became cyanotic. Later he began to suffer from difficulty in swallowing, and noticed a peculiar râle in the trachea when he drew a deep breath. He attributed his trouble to great exertion which he had made when shipwrecked, at which time, after floating for some time on a board, he finally reached land in an exhausted condition.

On the 15th of June the electro-puncture was made with three needles, and the currents, which were of several kinds,

were kept up for twenty-three minutes. Some hours after the operation there was a marked diminution in the difficulty of swallowing and breathing, while the pain was increased in severity and extent; and this change in the severity of the symptoms lasted until July 29. On the 13th of August the operation was repeated, three needles being introduced, and the currents maintained for thirty minutes. After this the pain continued unabated, while respiration was performed with more ease. From the 15th of August until the 10th of September the tumor increased in size and prominence, and became more painful. The difficulty of respiration and deglutition became from day to day more marked, and death occurred on the afternoon of the 10th. The post-mortem examination was made on the following day, when there was found on the base of the heart a large tumor, which had changed the position of that organ, carrying it downwards and to the left, so that its apex was in the sixth intercostal space to the outer side of a line drawn downwards from the nipple. The tumor was found to be due to enlargement of the arch of the aorta, its anterior and superior portions being filled with coagula of various ages.

From the observation of previous cases, it is fair to conclude that electro-puncture in the treatment of aneurism may be indicated either as a curative measure, or to alleviate the neuralgic suffering due to the growth of the tumor. From the present case, it would appear that this treatment does not always fulfil the latter indication, but it may relieve the difficulty of swallowing and breathing to which the aneurism gave rise. W. A.

Salicylic Acid in Otorrhœa (*Le Mouvement Médical*, November 20, 1875).—M. Van Stock has seen cases of chronic otorrhœa, which had resisted all other topical agents, yield as if by magic on the employment of salicylic acid. He is inclined to attribute this success to the antifermentative properties of the acid, which is more active than carbolic acid, without possessing the disagreeable and penetrating odor of the latter; neither does it interfere with the granulation and cicatrization of wounds. He uses a four per cent. solution, and recommends it particularly for use by the patient in those cases which can only be visited occasionally. J. W. W.

An Agreeable Cathartic (*Berliner Klin. Wochenschrift*, No. 41, 1875).—Dr. Paul Reich has been using during the past year a "tinctura rhamni frangulæ" (buckthorn), which he finds an agreeable form of administration of the cathartic, and one that is particularly appropriate to cases in which it has to be taken for a prolonged period. The usual dose of his tincture is two teaspoonfuls at night, but in some cases one suffices, causing a pultaceous stool the following morning. If a larger quantity is needed, he gives as much as four teaspoonfuls; if this does not act, he desists from the administration of the drug. W. A.

The Danger of Respiration by the Mouth (*Le Mouvement Médical*, November 20, 1875).—M. Guyes, of Amsterdam, calls attention to several evils which may arise from the substitution of respiration through the mouth for the normal or nasal respiration. He says that in this connection the function of the nose is triple: 1, the olfactory sense prevents the introduction of impure air, or at any rate causes its impurity to be recognized; 2, the moistness of the nasal walls gives rise to a certain degree of humidity in the inspired air which renders its contact much less irritating to the mucous membrane of the pharynx and larynx; 3, the retention of many of the solid particles which are suspended in the air is proven by the quantity of dust which is often found to have accumulated in the nostrils. Among those who habitually breathe through the mouth, pharyngeal disorders, chronic catarrh, etc., are very common, and are often transmitted to the Eustachian tube and the tympanum, producing deafness. He proposes an apparatus which he calls a *contra-respirator*, to prevent entirely respiration by the mouth. J. W. W.

Syphilitic Myositis (G. Manoury: *Gaz. des Hôp.*, 1875, No. 55).—A man, aged 38, while lifting a weight, had a peculiar sensation in the calf of the right leg, followed by pain of varying intensity which lasted several days. An examination of the leg revealed the presence of a tumor at a position corresponding to the outer head of the gastrocnemius.

Although there were no other symptoms on the body to confirm it, the diagnosis of syphilitic myositis was made. The results of treatment appeared to confirm it, for all symptoms vanished under the use of the iodide of potassium. W. A.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, JANUARY 22, 1876.

EDITORIAL.

WEATHER.

THERE is a wide-spread popular feeling that warm winters are more apt to breed sickness than are cold ones. The old English proverb, "A green Christmas makes a fat church-yard," is evidence that this belief came to this country with the Mayflower and the hosts of winged ships and grimy steamers which have been its lineal descendants. The experience of most of our readers, we think, has shown the fallacy of this popular feeling; warm winters, like cool summers, making light the professional purse and heavy the hearts of those who are immediately dependent upon their professional income. This individual experience is well borne out by the statistics of the English Registrar-General. In England the cold winter of 1874–5 embraced two distinct periods of low temperature,—one before, the other after Christmas. The first of these lasted about five weeks. During this period there were in London 9871 deaths, against 6967 in the five preceding weeks of mild weather; making an excess of 2904, or 42 per cent. The effect of the cold upon different ages was quite different. The rate of mortality due to the excess of deaths produced by cold was 2.2 per 1000 between 20 and 40, 9.4 between 40 and 60, 46.9 between 60 and 80, and 218.3 at 80 years and upwards. The cold mortality therefore increased about eight per cent. for each year of age over twenty years, and doubled every nine years. The significance of these figures is much enhanced by the fact that calculations based upon the intensely cold spell of six weeks in 1855 give practically the same result. The larger portion of this excess was from disease of the respiratory organs, but the increased mortality was far from being confined to such affections. Much of it was, no doubt, due to the hurrying of chronic cases to the end; but, deducting this, there is still a resultant of acute disorders produced directly by the low temperature. Of course, the greatest excess of increase was among the lowest classes, *i.e.*, among those who could not protect themselves from the cold.

NORTH MOUNTAIN SCHOOL OF PHYSICAL CULTURE.

FOR the repairing of the wear and tear of city life, it is well known, no specific is equal to dwelling in tents in the wilderness. No less true is it that for the development of physical virtues during early adolescence the same wild, out-door life is pre-eminent. The knowledge of woodcraft is usually begotten of the natural taste; but it is nevertheless true that the possession of the knowledge not only begets the desire to use it, but is necessary for the full enjoyment of the wilderness. Every city physician must have met with cases in which the power of being happy and contented in the wilderness would have aided greatly in the restoration of the patient. It is plain that he who develops in his son such power adds to the child's chances of success in life.

Dr. J. J. Rothrock, of Wilkesbarre, is about to start the "North Mountain School of Physical Culture," in which boys between twelve and eighteen years of age shall have during the months usually allotted to college vacation the advantages of an education in woodcraft and the natural sciences, combined with the pleasures and strength-giving usefulness of life in the woods. Dr. Rothrock singularly unites the qualities requisite for such an undertaking. A student of Agassiz and Wyman in zoology, thoroughly trained by Prof. Gray in botanical studies and widely known as a

governmental botanist, profoundly versed in wood-lore, possessed of a ripe experience acquired in leading exploring bands through the least known parts of Russian America and the Rocky Mountain territories, and well trained as a practitioner of medicine, he is one that can be trusted to do all that he undertakes, and relied on to govern wisely those committed to his care.

THE COLLEGE OF PHYSICIANS.

THERE is, perhaps, no more grateful editorial task than to chronicle signs of renewed life and progress in institutions whose joints and sinews have seemingly become hopelessly stiffened with age and crippled with rheumatic respectability. The handsome volume of Transactions before us, and the reports read at the annual meeting on January 5, show the unloosing effects of young blood poured into erst-time the most stalactitic, the most eminent, and the richest of all our American Societies. Of all the evidences of progress, none are more satisfactory than the effectual zeal manifested towards the library. There is no work for the advancement of medical science in this country, with the single exception of the destruction of the Cheap John, paper-helmet, tinsel-finery system of medical education, which is more vital than the building up of libraries. Therefore, whilst in all things we would incite to good deeds, we are especially satisfied with the facts that the "Journal Association" has been made a permanent fixture, and that during the last year eleven hundred volumes have been added to the possessions of the college library, which now has upon its shelves about nineteen thousand books.

PROFESSOR BOECK.

THE death of Prof. Wilhelm Boeck, especially famous as the great exponent of syphilization, is announced as having occurred December 10, 1875. It may be that the verdict of posterity will reverse the judgment of the present, but certainly Prof. Boeck has failed to impress upon his contemporaries the value of his method of treating syphilis. It seems probable that his future reputation will rest more largely upon his elaborate researches into elephantiasis than upon his now more famous labors.

To those who had the pleasure of his acquaintance, his modesty and the simplicity of his character rendered Prof. Boeck peculiarly attractive. Thoroughly educated, not only in medicine, but also in the languages and in the natural sciences; quiet and almost reserved in his manner, yet on occasion perfectly free and unreserved in his conversation; showing, to those who could appreciate, a deep sympathy with his fellow-men and with the beautiful in nature, Dr. Boeck left in this country an impression rarely equalled in its pleasant and, to some of us, tender recollections.

WE notice in a late issue of the New York *Medical Record* a very earnest, if not indignant, protest against the advertising and sale of patent medicines and secret nostrums by pharmacists. We commend this censure highly, but certainly the want of close supervision of the advertising columns of the *Record* diminishes somewhat the force of its editorial. In the same number in which the latter occurs we find at least one nostrum advertised,—probably through want of care.

NOWADAYS one has to go away from home to learn the news. We had supposed, indeed confidently believed, that Dr. Wm. H. Pancoast was Professor of Anatomy in the Jefferson Medical College. But, according to the "official announcement" in the New York *Medical Record* of January 1, 1876, he has no place in the faculty. Has he resigned? or was he not elected?

PROCEEDINGS OF SOCIETIES.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Reported by FRANK WOODBURY, M.D.

THE VICE-PRESIDENT, DR. THOMAS DRYSDALE, in the chair.

AT a conversational meeting held November 10, 1875, after the reading of the paper of the evening, "Are Croup and Diphtheria Identical?" which appears in full in another part of this journal, the thanks of the Society were tendered the lecturer for his interesting and able address, and the subject was opened for general discussion.

Dr. J. SOLIS-COHEN, in response to an invitation from the President, said, "There is hardly anything left for me to remark upon; not being opposed to the views expressed, but inclined to believe with the lecturer that the two diseases are not identical. I would say, however, in reference to the anatomical relations of the false membrane mentioned in the essay, that the distinction formerly made that the exudation in croup is free and superficial, while in diphtheria it dips down into the mucous membrane, though still held by some authors, has been lately retracted by Virchow, who says that the deposit may, in some cases of diphtheria, lie lobsely on the surface. In my own opinion and experience, idiopathic croup is a very rare disease, so rare that some physicians may go through life without seeing a single case of it. I cannot, therefore, rely upon the mortuary records of the city. If what I have just stated is true, then a great proportion of the fatal cases annually reported must be diphtheria and not croup. There is no doubt that many cases of non-specific inflammation of the air-passages are attended by an exudation. While in Reading, at the meeting of the State Medical Association, I saw a lady from whose throat I had removed a fragment of beef-bone two years before. From time to time, since the operation, she had coughed up shreds of false membrane, some of which had been kept for me in a bottle, which I brought with me to the city and presented at a recent meeting of the Pathological Society. Exudation may also be caused, as referred to in the address, by the application of ammonia or acids.

"But if in a case of sthenic disease connected with difficult breathing there were exudation in the larynx and pieces of false membrane were discharged by coughing, the patient appearing well shortly afterwards, without any evidence of asthenia, I should consider it as a case of true croup. We must not forget that the diseases may be combined, and that a patient with croup may contract diphtheria, or, conversely, that a diphtheritic case may acquire an attack of croup. In examining lists of so-called cases of croup, it is certain that there are some that we would consider as diphtheria; and in going over a report of a number of cases of diphtheria, there would be some that might be pointed out as instances of true croup.

"The gentleman has hardly given due attention to the important significance of the tender and enlarged lymphatic glands under the angles of the jaw; these submastoid and submaxillary glands are always found enlarged in diphtheria, because they are in direct anatomical relation with the seat of the disease, *i.e.*, the palate and throat, and, if not large enough to be seen, they can almost always be felt early in the affection. Then, again, cases die of diphtheria from the blood-poisoning or from asthenia alone, without any laryngeal obstruction being observed during life or discovered after death; but in fatal cases of croup we always find that death is directly due to the obstruction in the air-passages or to asthenia brought about by its long continuance.

"One more point I wish to refer to. The lecturer quoted Dr. Jenner as an advocate of the identity of the two diseases, because he had found albuminuria in certain cases which at that time he called croup; but I may mention that this gentleman has recently been converted to the views of those who regard the diseases as pathologically distinct; so that his name can no longer be advanced as authority for supporting the opposite opinion."

Dr. WASHINGTON L. ATLEE.—"I agree with the preceding remarks in so far as I am disposed to look upon the two diseases as being essentially different. But I do not think that the lecturer quite proved his point. Cases of diphtheria, as I understand him, are characterized by longer duration of the illness, by the exudation occurring in the fauces, and the appearance of albumen in the urine. But cases occur where the patients die before the poison has had time to act on the kidneys; for he gave a case which was rapidly fatal with laryngeal complication, but without albumen in the urine, if I heard him correctly."

Dr. WELCH.—"The case Dr. Atlee refers to was rapidly fatal, as he states, but, unfortunately, no notes of the urine were taken."

Dr. ATLEE.—"A rapid case of diphtheria might not have albuminuria, but a case of croup prolonged, supposing the diseases are identical, might cause it, from long-continued action of the poison on the blood. Old practitioners have been surprised at the prevalence of diphtheria at the present day; for my part, I have seen very little of it. This may be owing, however, to my gradual withdrawal from general practice. It appears that of late it has become fashionable to call many cases diphtheria in which I can see nothing but ordinary catarrhal inflammation, which yields to very simple treatment, and which I would pronounce neither croup nor diphtheria. I think there is more diphtheria in

the minds of the physicians than in the throats of the patients. As there are no anatomico-pathological differences in the exudation of croup and diphtheria, the only distinguishing points, if I understand the lecturer, were the albuminuria and the paralysis. The albumen, as I have already mentioned, may depend on the duration of the disease, and the paralysis may perhaps be explained by its location. Occurring in the pharynx and nasal passages, along the base of the skull, it seems as if the inflammation might travel by the contiguous structures, or the neurilemma of the nerve-trunks, into the brain-substance, which would not be so likely to occur when the affection is confined to the larynx and trachea."

Dr. PEPPER.—"This question seems to be again becoming the order of the day, and it is to be hoped that ere long some definite conclusion may be reached. At present, I confess for my own part that I feel hesitation in siding with either of the two opposing views which would regard these affections as either entirely distinct or as altogether identical. I would much prefer to limit myself to saying that, so far as the evidence in our possession and the results of my own experience have enabled me to understand this difficult question, there seems to be sufficient reason for regarding pseudo-membranous croup and diphtheria as entirely distinct affections. I am not, of course, forgetful of the many striking points of difference between a typical case of membranous croup and one of grave epidemic diphtheria; but the question rather seems to be whether there are not analogies and also intermediate forms of disease which would incline us to rank them as belonging to the same generic type of disease.

"The points upon which most stress is laid in supporting the view that the affections are essentially distinct are of course familiar, and have been ably dwelt upon by the author of the interesting paper we have heard this evening. But if the absence of grave constitutional symptoms, of marked implication of the lymphatic glands, of tendency to the formation of pseudo-membrane on abraded surfaces, of albuminuria, of paralytic sequelæ, etc., lead us to say that pseudo-membranous croup is merely a local inflammation, quite distinct from diphtheria, we must certainly admit that there is also a pseudo-membranous angina where these features are equally wanting, and which must therefore also be regarded as essentially non-diphtheritic.

"Not a season passes that I do not meet with a number of such cases. Moreover, it is to be borne in mind that, in a good many cases of membranous croup, examination of the pharynx at an early day shows the transient existence there of membranous deposit. It seems undoubted to me, therefore, that sporadic cases of both angina and croup occur of altogether analogous nature, and yet differing widely from the well-known characters of epidemic diphtheria. Still, in every epidemic of the latter, numerous cases of membranous angina will be met with in which all of the grave symptoms I have above mentioned are wanting, and which, therefore, cannot be distinguished from such sporadic cases as are met with every year, when no epidemic is prevailing. This has been very strikingly exemplified this past autumn, in the very severe epidemic which has caused so many deaths at Manayunk and Conshohocken, while at the same time there has been noticed in the central parts of the city only a rather unusually great number of cases of mild membranous angina or membranous croup. When such cases, without grave constitutional symptoms, are met with among others of a more severe type, no hesitation is felt in classing them as a mild form of diphtheria; and I do not see any sufficient reason for refusing to regard them in the same way when they occur sporadically.

"If we are to recognize a diphtheritic and a non-diphtheritic pseudo-membranous angina and croup, it would be found extremely difficult to tell just where the dividing line is to be drawn, and what special symptom or symptoms should be relied upon as distinguishing the one form from the other. Here, as in all other analogous cases, there occur very many intermediate types, so that between the simple sporadic cases with scarcely any lymphatic affection, no albuminuria, and no paralytic sequelæ, and the grave epidemic forms, there are cases of every grade of severity, in which the constitutional symptoms assume a more and more prominent character.

"I confess, then, as I have said before, that I incline more and more to the belief that, for all practical purposes, it is safer and more correct to regard pseudo-membranous croup and diphtheria as belonging to the same type of disease; whilst at the same time we recognize distinctly, both in theory and practice, the vast difference which may exist between a case of sporadic, sthenic, and membranous croup and one of grave epidemic laryngeal diphtheria."

Dr. H. C. WOOD.—"It may be that both views are correct in part; that both the advocates and the opponents of the doctrine that croup and diphtheria are identical may be looking at different parts of the truth. Two diseases may be in a sense the same and yet be essentially distinct. Dysentery, for instance, as we commonly meet it, is an entirely different disease from the camp dysentery with which some of us became familiar during the war, and which is due to miasmatic poisoning. The two diseases are classed as dysentery, and yet there is a very clear distinction between them; and this may be the case in the question we are discussing. The membranous inflammation may be looked upon as a specific form of inflammatory action, most apt to affect the larynx and its neighborhood. A simple

cold may invoke this form of inflammation about the air-passages in a child constitutionally prone to membranous inflammation, for it is notorious that the tendency is hereditary.

"Again, the same constitutional tendency may be invoked or be increased by the effect of a specific poisoning to such a degree that every inflammation about the body takes upon it the diphtheritic type. We may call these two states—that invoked by cold in a child prone to membranous inflammations, and that produced by a specific poisoning—the same disease or different diseases, according as we view the local lesion or the attending constitutional changes as the more important."

Dr. GEORGE HAMILTON.—"To my mind it is difficult to reconcile mere extreme variations in the symptoms or intensity of disease with actual change in specific character. Morbid or other influences are numerous, and to these each pathological condition must be obedient, and be modified, more or less, in proportion to their power. Dysentery may serve as an illustration. Here, almost every variety of fecal discharge may be seen when several members of a family are attacked; so that in one patient only a slight deviation in this feature or in the general symptoms is observed, whilst in another death results from the uncontrollable malignancy and force of morbid action. A paper in support of the identity of croup and diphtheria was read before this Society about a year ago. The ensuing discussion, rather adverse to the views of the lecturer of the evening, gave rise, apparently, to two papers published in the *Medical Times;* the first, under the heading 'The Moloch of Tradition,' eliciting a response entitled 'Old and New Dogmatism.' I have no opinion to offer other than the one expressed by me upon the occasion alluded to, against the identity of croup and diphtheria. I would like to ask Dr. Cohen, however, if I understood him correctly to say that croup is a rare disease."

Dr. COHEN.—"Probably only one out of twenty cases met with and considered as croup would really be that affection; a physician would see twenty cases of diphtheria before he would see one case of true pseudo-membranous laryngitis."

Dr. HAMILTON continued: "The lecturer of this evening states that croup never occurs as an epidemic, and in this view physicians generally will probably concur, whilst, on the other hand, diphtheria, as we all know, has prevailed with fearful effect in this form. The determination of this point would probably lead to the solution of the main question. In support of identity we have Bretonneau, Guersant, Johnson, and Trousseau; and upon the opposite side we see a Niemeyer, a Flint, and others of similar experience, powers of observation, and judgment. One point insisted on by those who maintain the distinct character of croup is the early, or rather primary, implication of the mucous membrane of the larynx and trachea. Trousseau, whose opportunities for observation were extraordinary, admits that such cases occur, yet regards them as exceptional, declaring that nineteen cases out of twenty exhibit the diphtheritic deposit first in the fauces, and that such would be seen to be the fact were it not that the attention of the practitioner is generally not directed to an inspection of these parts until the croupal symptoms supervene, when the deposit may have nearly or entirely disappeared from the mucous membrane of the fauces. The question of the identity or non-identity of the pathological conditions involved appears to be far from decided, and, as intimated by Dr. Pepper this evening, affords in its present aspect no place for dogmatism."

Dr. W. T. TAYLOR.—"I have been much interested in the remarks made by the gentlemen who have spoken this evening, and by the paper that called them forth. The question, as well as the minds of some of those who have discussed it, seems to me to be in an undecided state. I have had cases that I considered croup, and afterwards thought were diphtheria on account of the prostration that accompanied them; instead of being of an active character, the symptoms showed great depression, and the patients, who were sinking, given quinine, iron, punch, and nourishing diet, soon revived under supporting treatment, after they had expectorated false membrane."

Dr. DRYSDALE.—"I would like to ask the first speaker how he would distinguish pseudo-membranous from diphtheritic croup."

Dr. COHEN.—"The difference between the cases is difficult to describe, but may be easily recognized by the experienced eye. I have seen cases in which the child was not exposed to any contagion; there was no water-closet in the house, and no source of septic poison could be discovered; without asthenic symptoms, where, after steaming the throat, using, perhaps, in the atomizer some bromine, or inhaling the vapor from slaking lime, the false membrane was separated and coughed up in shreds: these I would characterize as true croup. The characters of diphtheria have been already dwelt upon. There is no difficulty in pronouncing between typical cases; it is those whose symptoms are not sufficiently marked that give trouble; but although the affections are universally acknowledged to be analogous, it should always be remembered that there is a great difference between similitude and identity. The question is, whether croup following exposure to cold is without doubt the same as a case of diphtheria following exposure to septic poisoning. The lecturer mentioned micrococci; but these have been proved to be present in other affections than diphtheria, and are therefore not distinctive

or characteristic of any disease in particular, though it may readily be comprehended that the parts in diphtheria may favor their special development. There is no anatomical or chemical difference known to pathologists in the character of the exudation, but clinjcally it appears to me that there is an important distinction. Even the paralysis cannot be relied upon, as I have mentioned a case in my work on 'Diseases of the Throat,' in which local paralysis supervened upon ordinary catarrhal inflammation; but these accidents of convalescence are of secondary consideration, and cannot assist us in our diagnosis of the disease in time to avail for special treatment in the primary affection. I would sum up the difference clinically in a few words: if you are called to see a case of undoubted pseudo-membranous laryngeal exudation, which you feel would bear antiphlogistic treatment if called for, you would be safe in considering it a case of croup; if it is not sthenic, but evinces the influence of a powerful depressing impression upon the system in a patient of unimpaired constitution before the attack, it would almost certainly be diphtheria. I stated that cases of true croup were rare, more so than they used to be; at least this is so since 1860, beyond which time my experience with the disease does not go far. I have no doubt that the older gentlemen, members of this Society, have seen many cases of the kind referred to, that would bear antiphlogistic treatment in former times, and that they do not see as many to-day."

REVIEWS AND BOOK NOTICES.

PHTHISIS: ITS MORBID ANATOMY, ETIOLOGY, SYMPTOMATIC EVENTS AND COMPLICATIONS, FATALITY AND PROGNOSIS, TREATMENT AND PHYSICAL DIAGNOSIS. In a Series of Clinical Studies. By AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, etc. 8vo, pp. 446. Philadelphia, Henry C. Lea, 1875.

Very few physicians have had the opportunity for studying so large a number (over 670) of cases of phthisis as Dr. Flint analyzes in this volume. And, although our own observations have led us to form opinions as to the nature of phthisis different from those held by him, we cheerfully admit that we know of no one in America whose conclusions on this subject would carry with them more weight than his. We shall make no attempt at criticism, but shall, as briefly as possible, lay before our readers some of the more important of the author's deductions.

We believe that Dr. Flint's view in regard to the relationship existing between the "gray granulations and the so-called tuberculous exudation or infiltration" is fairly stated when we say that he looks upon them "either as effects of a common underlying cachexia, or associated merely by coincidence." Acute lobar pneumonia occurred as an antecedent disease in only nine of his cases. He concludes, therefore, that the danger of this affection being followed by phthisis is extremely small. To pleurisy, especially, when accompanied by effusion, he attributes a protective influence; even in those cases in which it appears to precede an outbreak of phthisis immediately he is inclined to think that it has been set up by tubercles seated at the superficies of the lung. Bronchitis, he is convinced, has not a causative influence in the development of phthisis. He holds that hæmoptysis is never the cause of the disease, as taught by Niemeyer; regarding it as evidence of a deposit which has escaped detection. Its occurrence, he thinks, is rather a favorable circumstance in the course of phthisis, its tendency having been, in his experience, to prolong life. The co-existence of laryngitis, provided it does not interfere with alimentation, or that of perineal fistula, does not diminish the chances of recovery, arrest, or slow progress of the disease.

Recovery took place in forty-four of the cases observed by Dr. Flint; in twenty-three of which this termination was in no measure attributable to treatment, there being in several cases not even a material change in the habits of life. In these cases, he says, "the disease ended in recovery from an intrinsic tendency thereto." He believes that life is prolonged by the employment of hygienic measures, among which the abandoning of sedentary occupations for out-door occupations is especially commended. Sea-voyages are often beneficial, and so is change of climate; the latter principally, he thinks, in consequence of the change of habits which generally accompanies it. Better results have been obtained from cod-liver oil than from any other medicine. Alcohol is of service, but should never be pushed so far as to produce its intoxicating effects.

The last chapter in the book is devoted to the discussion of the "Physical Signs and Diagnosis of Phthisis," and will be found well worthy of an attentive perusal.

J. H. H.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. By J. LEWIS SMITH, M.D. Third Edition. Philadelphia, H. C. Lea, 1876.

The second edition of the treatise of Dr. Smith was reviewed in one of the early volumes of this journal. The only criticism which we then had to make was want of fulness. This has in a measure been remedied by additions; but the volume does not yet compare in completeness with the bulkier works on the same subject. It is, however, better adapted for the student than are its more prolix rivals.

The present edition is certainly an improvement on its predecessor. We especially commend the sensible conclusion reached in the chapter on diphtheria, that the bacteria in the false membrane are "a consequence and not a cause" of the latter. On the other hand, we cannot but censure the summary dismissal of the cold treatment of high temperature in scarlet and other fevers. The use of cold water is supported by scientific deduction, and a large number of prominent clinicians assert that at the bedside they have proven its effects to be marvellous. It is the simple duty of every writer upon, or teacher of, clinical medicine, to give the treatment of fevers by the abstraction of heat, a conscientious trial. This, Dr. Smith seemingly has never done.

GLEANINGS FROM EXCHANGES.

UTERINE ASTHMA (*The Practitioner*, December, 1875).—Mr. G. Waring-Curran calls attention to the variety of asthma not unfrequently met with, in those patients at a particular time of life who suffer from uterine tumors, and which seems slow in yielding to the ordinary remedies. Women with fibroid tumors of the uterus or its appendages appear to suffer more severely than those who have any other form of tumor, and the paroxysms of asthma are most severe during the menstrual period, which, in general, is excessive and prolonged. The result of his experience is that in such cases applications to the chest, inhalations, and smoking afford no relief, but the whole attention must be directed to the uterus. If the asthma precede the catamenia, the flow must be encouraged by a warm bath and a small dose of ergot. Should the discharge be excessive, it must be controlled, but not stopped, by judicious and well-timed doses of the same drug; but that which will relieve the asthma at any stage is belladonna, applied locally and given freely internally. The extract is the most satisfactory and reliable preparation for external use, while the tincture may be given internally, combined with full doses of bromide of potassium. In the intervals iron and strychnia should be prescribed, and iodine applied locally; in any instance where there is prolapse of the womb with a tumor behind, belladonna suppositories are useful. The extract of belladonna should not be confined to the region where the tumor is situated, but the spinal nerves should get the benefit of a little spread on a piece of lint and applied along the lower dorsal and lumbar spine.

A CASE OF IRRITABILITY OF THE FEMALE BLADDER OF FIFTEEN YEARS' STANDING CURED BY DILATATION OF THE URETHRA AND NECK OF THE BLADDER (*The Lancet*, December 4, 1875). — Mr. H. Bendelack Hewetson reports the case of an unmarried woman, aged 36, whose history at the time of first coming under observation was as follows:

"That she was a perfectly strong and robust woman, following the arduous duties of a 'present day' schoolmistress until fifteen years ago, when she was seized with an inflammation of the bladder, for such it was termed by her medical attendant. This was followed by the formation of a small abscess in the region of the urethra, which discharged of itself. Since that time her health has been bad, preventing the continuance of her calling. She states that since her recovery from this attack her nights have been wakeful and disturbed by being constantly 'every half-hour or hour' obliged to get up to pass small quantities of urine with great effort and some pain. She is low and depressed, with almost constant headache, loss of appetite, and continual bearing down, resulting in a total unfitness for prolonged exertion of any kind. She has lost flesh considerably."

On examination, the orifice of the urethra was found to be completely surrounded by warty growths of a considerable size, and on examining the rectum the introduction of the finger was impeded by a very tight sphincter ani. The rectum was baggy, and there was a small external pile. The uterus was in its natural position, the catamenia were, and had always been, regular, and the urine was natural. Not being able to estimate to what extent the retention was due to the warty growths, and seeing that she was suffering considerably from rectal difficulties, it was deemed advisable to negative the possibility of the retention being caused by the warty growths by removing them, and, whilst the patient was under the influence of an anæsthetic, stretching the sphincter ani with the forefingers introduced back to back sufficiently forcibly to paralyze it for a time and allow the sore produced by the snipping off of the pile to heal; in the same way as one would cure a fissure of the anus, by setting the spasm of the sphincter ani at rest, which, constantly contracting, might possibly be an element, through reflex action, in helping to keep up the vesical irritability.

Accordingly, on March 5, chloroform having been administered, the above suggestions were completely carried out. The result of this was, that during the next few weeks relief was given to the retention of urine and to the pain in passing the motions; but there was no relief at all from the vesical irritability. Her general condition, with these exceptions, continued as before, and there was a return of the retention of urine at the end of three weeks from the operation.

She had been clearly told that a second operation would possibly be necessary should the first fail to give relief, and accordingly she was again placed under the influence of chloroform, and Weiss's female dilator was introduced into the urethra to the extent of

about two inches, and the blades of the dilator were then slowly separated, stretching the urethra so as to admit of the introduction of the two forefingers within the bladder while the parts were on the stretch. On closing the blades and withdrawing the instrument, the urethra contracted upon the little finger, so as sensibly to grip it when introduced into the bladder, the coats of which were thickened. There was no foreign body or stone to be detected.

There was after this operation no more irritability of the bladder, no retention, no incontinence; she remained perfectly free from all such symptoms, and enjoyed robust health.

INTERNAL URETHROTOMY (*The Lancet*, December 4, 1875).—Mr. Teevan considers no operation upon a passable stricture justifiable unless milder measures have been tried and found wanting. The great point in the operation of internal urethrotomy is to prove before cutting that the catheter-staff or guide has really been passed into the bladder, which may be done by withdrawing urine through it. Provided this, the one thing needful, were done, it mattered but little whether the stricture was divided from before backwards or *vice versa*. Some surgeons had an objection to the division from before backwards, but the objection could not be maintained, and had arisen from the fact that formerly the division from before backwards had been performed without demonstrating that the instrument was really in the urethra. Hence it was that mistakes had arisen from the urethrotome having been passed into a false passage or the rectum, and thus it was that the principle of division from before backwards had been saddled with the errors of a faulty execution, which really formed no part of the operation. In internal urethrotomy the prostate and neck of the bladder were not touched. This was a most important point, for whatever hemorrhage ensued it must make its exit at the external meatus, as it could not gravitate backwards into the bladder, its neck being firmly closed. If a blood-clot formed in the bladder a stone might result. Now, this could not occur in internal urethrotomy, but it might do so when a stricture was forcibly dilated, for Civiale had pointed out that in that operation the neck of the bladder might be injured, and allow of hemorrhage into the organ, and he had been informed of a case where, after the operation of immediate dilatation, a stone had formed on a blood-clot. Of all operations for stricture, internal urethrotomy was attended with the least risk. Its twin sister—subcutaneous section—excelled it so far as regards the certainty of insuring a thorough division of a stricture, but it was not always applicable.

BACTERIA AND SEPTICÆMIA.—In an elaborate experimental paper (*New York Medical Record*), Dr. T. E. Satterthwaite arrives at the following conclusions:

1. Bacteria are certain vegetable organisms which belong probably to the algæ; they are found abundantly in nature, but chiefly where there is moisture.

2. They exist in the body in health, covering the mucous membranes from the mouth to the anus, and sometimes appear to penetrate a certain distance into the system, without causing symptoms of disease.

3. They also exist in putrefying fluids, and in various disease-processes, occurring in hot and cold abscesses, in the blebs of erysipelas, and in simple blisters.

4. It is doubtful whether the virulent principle of infective diseases is albuminous.

5. This principle does not reside in the perfectly clear fluid that passes through porous clay. In putrid infectious fluids this appears to be certain. The poison is rendered less virulent by repeated filtrations through common filter-paper.

6. The virulent principle may be boiled for hours, filtered numbers of times in the ordinary way, boiled with alcohol, and again filtered and dried, and yet the watery extract of such a dry residue will produce septic symptoms. It is therefore soluble, or at least suspended, in water.

7. The liquid which is thus poisonous may be clear to the eye, but contains granules under the microscope.

8. These granules have not produced bacteria in a number of instances when they were placed in a suitable condition to do so.

9. We cannot, therefore, feel that satisfactory evidence has been brought to show that, in any of the diseases or processes enumerated, minute organisms are the sole and sufficient causes of disease.

A CASE OF CORROSIVE ULCER OF THE DUODENUM ASSOCIATED WITH INTERSTITIAL NEPHRITIS (*The Boston Medical and Surgical Journal*, December 23, 1875).—Dr. George S. Tarbell reports the case of a man, æt. 44, who suffered from general weakness, palpitation of heart, pain in the small of the back, dyspnœa on exertion, etc. These symptoms continued, with varying intensity, until recently, when dry cough, nausea, and occasional vomiting, loss of appetite, and increased pain in the back occurred; swelling of the feet and legs and a fulness in the epigastrium were noticed a day or two later. The bowels were constipated, and there was slight jaundice.

A smooth, rounded tumor was found in the epigastrium, occupying about one-half of the space between the ensiform cartilage and the umbilicus, and extending across to the cartilage of the ribs on each side; it was dull on percussion and tender on pressure. The urine was acid; its specific gravity was 1015; it contained considerable albumen, but no casts.

The patient's principal complaint during his entire sickness was of pain and distress in the epigastrium. The tumor steadily increased in size, extending downward towards

the umbilicus, and the tenderness and distress in the epigastrium were so marked that examination of the tumor caused great pain. The patient could take no food except milk. The œdema of the legs increased, extending up the thighs. The skin was tense and shining, and serum transuded. Œdema of the lungs also increased, causing dyspnœa.

About twenty days later, the patient began to have frequent attacks of vomiting of a dark, grumous fluid, apparently coagulated and blackened blood mixed with mucus, and often amounting to two or three pints at once. This continued at intervals for two weeks, when, in addition to the vomiting, he had several profuse discharges from the bowels looking much like the matter vomited. Two days after this it was found, on examination of the epigastrium, that the tumor had nearly disappeared, and there was normal resonance on percussion over the stomach, although tenderness remained; an ill-defined, solid substance could be felt on deep pressure, apparently behind the stomach. After this the œdema of the legs almost disappeared, but the urine was still albuminous, and a few days before the patient's death, eight weeks after, epithelial and granular casts were found in it.

At the autopsy an ulcer of the duodenum, about three-fourths of an inch in diameter, was found on the posterior wall just below the pylorus; it extended completely through the walls of the intestine, the base being formed by the pancreas. Dr. Tarbell quotes Dr. Trier, of Copenhagen, as having arrived at the following conclusions on this subject:

First, that corrosive ulcer occurs in the duodenum only one-tenth as often as in the stomach.

Second, that ulcer of the stomach is twice as frequent in females as in males, while ulcer of the duodenum is five times more frequent in males than in females.

Third, that it is a disease of adult life, the average age being forty-two years and six months.

Case of Grave Lesion of both Corpora Striata (*The Lancet*, December 18, 1875).—Dr. W. Julius Mickle reports the case of a man, æt. 37, who, having symptoms of cerebral disease, died some time after coming under observation, from rupture of an intrathoracic aneurism. At the autopsy, softening and disintegration of both corpora striata were found, extending through the whole length of those bodies. The chief point of interest in the case is that, while so much of both his corpora striata were destroyed for all practical purposes, this man's hemiplegic symptoms were always slight, and scarcely continued beyond a few months. True, he was inert, indisposed to move, and walked slowly; but this, though partly from feebleness, was mainly the result of his mental condition. The only history of palsy to be obtained was that of an attack of hemiplegia about three years before his death,—of which side not stated; the patient himself said it was of the right,—and slight dextral hemiplegia existed when he was admitted. No history of symptoms due to the lesion in the right corpus striatum was known, and no symptoms of this character were observed, unless, indeed, it aided in causing his inaptitude for exertion.

Finally, there was no aphasia. Speech was low and mumbling, he was disinclined to converse, his replies were usually nearly monosyllabic; but, when urged, he could, and often would, speak more fully to the point, and used his limited vocabulary without hesitation or mistake. The use of language was partly restricted by his mental condition; the impairment of articulation was merely of a paretic nature, and the essential characters of aphasia proper were absent.

Congenital Stricture of the Hepatic Duct, with consequent Cirrhosis (*The Lancet*, December 11, 1875).—At a meeting of the London Pathological Society held recently, Dr. Legg showed a specimen of congenital stricture of the hepatic duct, with consequent cirrhosis, obtained from an infant who had lived to the age of five months, having been jaundiced from birth. There was no bleeding from the navel when the funis separated. The liver and spleen enlarged under observation. After death the hepatic and portal vessels were found to be natural. The cystic and hepatic ducts opened into a cyst the size of a marble, between which and the duodenum passed a membranous band. Followed towards the liver, the right hepatic duct was first much dilated and then greatly thickened, so that its branches within the liver could not be pursued. The left duct was thickened throughout, and almost impervious. The liver was granular and markedly cirrhotic. The spleen was very large. Dr. Legg stated that there were only eleven such cases on record, two being recorded in the Pathological Transactions, one by Dr. Wilks and the other by Dr. Nunneley. In Dr. Nunneley's case the infant lived seven months. He thought that the cirrhosis of the liver was secondary to the dilatation of the bile-ducts, because of the rarity of cirrhosis in infants, the limitation of the thickening to the walls of the ducts, and the fact that ligature of the duct in animals led to similar interstitial increase of connective tissue. There was no evidence of syphilis in the present case. It appeared probable that in many cases of umbilical hemorrhage there was a similar congenital obliteration of the duct; but post-mortem records of such cases are rare. Dr. Legg thought the occurrence of umbilical hemorrhage could be explained by connective-tissue growth in the hilus of the liver constricting the portal vein, and thus tending to keep the umbilical vein open, the blood flowing in the direction of least resistance. In many cases of umbilical hemorrhage there was bleeding from other parts of the portal tract.

MISCELLANY.

COMPOUND FOR REMOVING GREASE-STAINS FROM CLOTHING.—An earthy compound for removing grease-spots is made as follows: Take fuller's earth, freed from all gritty matter by elutriation with water; mix with half a pound of the earth so prepared half a pound of soda, as much soap, and eight yolks of eggs, well beaten up with half a pound of purified ox-gall. The whole must be carefully triturated upon a porphyry slab; the soda with the soap in the same manner as colors are ground, mixing in gradually the eggs and ox-galls previously beaten together. Incorporate next the soft earth by slow degrees, till a uniform thick paste be formed, which should be made into balls or cakes of a convenient size, and laid out to dry. A little of this detergent being scraped off with a knife, made into a paste with water, and applied to the stain, will remove it.—*Canada Pharm. Jour.*

CARLYLE AN ANTI-VIVISECTIONIST.—The London Anti-Vivisection Society recruits new adherents every day. Carlyle, who has become an active member, explains his conduct as follows: "In general, I prefer the lower animals to man; I am opposed, therefore, to the sacrifice of the former to the latter."—*La France Médicale*, December 18, 1875.—*The Clinic.*

EARLY REFERENCE TO JABORANDI.—The following passage was quoted from Dr. Piso's "Travels in South America" by Dr. Robert Boyle in 1772:

"I saw divers, as it were in an instant, redeemed from death, who had been poisoned by the eating of venomous mushrooms and other unwholesome things, only by drinking a recent infusion of the root of *jaborand*, whilst myself and others of Galen's disciples blushed to see the ineffectual endeavors of all our alexipharmacy, treacles, and other antidotes; so that I afterwards suffered myself to be joined in consultation with these barbarous colleagues, not so much to be arbiters of the condition of our men by their pulse, as to gain their assistance and counsel in the abovementioned way, namely, the prescribing of proper medicines."—*Brit. Med. Jour.*

CARBOLIC ACID AS USED FOR THE PURPOSES OF DISINFECTION.—The following resolutions were adopted at a meeting of physicians recently held in New Orleans:

1. Carbolic acid, as used for purposes of "disinfection" by the Board of Health in New Orleans during the years 1867, 1870, 1871, 1872, 1873, 1874, and 1875, has failed to arrest smallpox, scarlet fever, and yellow fever.

2. Carbolic acid, as used for purposes of "disinfection" by the Board of Health in New Orleans, has in several instances proved injurious to the inhabitants of the "*disinfected*" districts.

3. The facts observed in New Orleans, during the practice of carbolic-acid "disinfection" upon a larger scale than ever before in the history of sanitary science, sustain the view held by high authorities, that it is impossible to disinfect the atmosphere of an entire city, or even of a circumscribed area, as of two or more squares.

Cases of yellow fever have occurred in succession, at long intervals, in houses and localities which have been most thoroughly subjected to the so-called "carbolic-acid disinfection." Instances have been observed where unacclimated individuals, returning from the country before cold weather had put an end to the disease, and entering those districts of the city in which carbolic acid had been most lavishly employed as a "disinfectant," have been attacked by yellow fever.

4. Yellow fever has followed its usual course, increasing up to a certain period, and then declining with the fall of temperature, and ceasing with the appearance of frost. No connection has been traced between the decline and cessation of the disease and the amount of carbolic acid used for the purposes of "disinfection."—*New Orleans Med. and Surg. Journal*, November, 1875.

CEREBRAL DIAGNOSIS.—As an instance of the impossibility of certainty in cerebral diagnosis, the result of the post-mortem examination of the late Professor Bennett is most striking. As our readers well know, he died from the effects of a lithotomy. In his brain, or rather on his brain, within the cranium, was found a tumor the size of a hen's egg. He had never had any cerebral symptoms.

ARSENIC-EATING.—At a late meeting of the Deutscher Naturforscher und Aerzte Gesellschaft, Dr. S. Knappe brought forward some Styrian arsenic-eaters, who severally took, there and then, from four to six grains of the sulphurets and oxides of arsenic. The presence of the metal in their urine was also proven by Dr. Hoffman. Toxicophagi are no longer Brobdignagians.

AN active anti-vaccination movement has been set on foot in Berlin. The Berlin Medical Society and the Public Health Society have both protested to the Reichstag against that body's granting the request of the petitioners who clamor for a repeal of the compulsory vaccination act.

MANY of our teetotal friends will learn with sorrow that ginger beer contains from two to five per cent. of alcohol. Let it be accursed.

THERE is stated to be so dire a scarcity of subjects in London as seriously to affect the medical teaching.

OFFICIAL LIST.

MEMORANDUM.

No changes of stations and duties of medical officers of the United States Army from January 1 to January 15, 1876.